a WHAT IS CLAIMED IS:

~~Patent Claims~~

1. Method for the transmission of data in an ATM transmission system, wherein

digital data of a specific plurality of data channels (K_0-K_3) supplied parallel to the input side are converted into data units (HB0, HB1) that respectively comprise an identical plurality of bits from each data channel (K_0-K_3), and wherein the individual data units (HB0, HB1) are serially transmitted in the form of cells that are respectively composed of a specific plurality of these data units (HB0, HB1), characterized in that each cell comprises a specific, characteristic bit sequence;

the serially transmitted data units (HB0, HB1) are received;

the received data units (HB0, HB1) are monitored for the occurrence of the characteristic bit sequence and, after identification of the characteristic bit sequence, the first data unit (HB0) of the cell corresponding to the characteristic bit sequence is determined;

beginning with the first data unit (HB0) of the cell corresponding to the characteristic bit sequence, the individual bits of each data unit (HB0, HB1) of the corresponding cell are successively divided onto a plurality of parallel data channels (K_0-K_3) of the output side corresponding in number to the plurality of data channels (K_0-K_3) of the input side and the bits of each data unit (HB0, HB1) are output parallel via the corresponding data channels (K_0-K_3) of the output side.

2. Method according to claim 1, characterized in that the characteristic bit sequence transmitted within each cell comprises 8 bits.

3. Method according to claim 2, characterized in that, in step b) before the transmission of the characteristic bit sequence, the more-significant bit of the characteristic bit sequene [sic] is set in alternation from cell to cell.

4. Method according to claim 3, characterized in that the remaining bits of the characteristic bit sequence are the same for each cell.

5. Method according to one of the preceding claims, characterized in that the plurality of parallel data channels (K_0-K_3) of the input side is four, whereby the digital data are synchronously supplied to the four data channels (K_0-K_3) of the input side in parallel form in step a).

6. Method according to claim 5, characterized in that, in step a), the data of the data channels (K_0-K_3) of the input side are converted such into the data units (HB0, HB1) to be serially transmitted that each data unit (HB0, HB1) comprises one synchronously read-in bit from each data channel (K_0-K_3), whereby the bit of a specific data channel (K_0-K_3) is arranged at the same location in every data unit (HB0, HB1).

7. Method according to claim 5 or 6, characterized in that the characteristic bit sequence is transmitted in the form of two successive data units (HB0, HB1) with respectively four bits in step b).

8. Method according to one of the preceding claims, characterized in that, in step b), the characteristic bit sequence is transmitted before a first data unit of the corresponding cell that comprises the bits of the data channels (K_0-K_3) of the input side.

9. Method according to one of the preceding claims, characterized in that the individual data units (HB0, HB1) are transmitted via an optical transmission medium in step b).

10. Method according to one of the preceding claims, characterized in that, in step a), the digital data of the individual, parallel data channels (K_0-K_3) of the input side are converted clocked into the data units (HB0, HB1) to be serially transmitted; and in that, in step e), the individual bits of every serially transmitted data unit (HB0, HB1) are divided clocked onto the individual, parallel data channels (K_0-K_3) of the output side and are output.

11. Method according to one of the preceding claims, characterized in that each cell, including the characteristic bit sequence, comprises 64 bytes that are transmitted in 128 data units (HB0, HB1) with respectively four bits in step b).

12. Method according to one of the preceding claims, characterized in that each cell encompasses a first group of data units that comprise control information and a second group of data units that comprise payload information, whereby the first group comprises the characteristic bit sequence for the corresponding cell.

13. Method according to claim 11 and 12, characterized in that the first group comprises 16 bytes and the second group comprises 48 bytes.

14. ATM transmission system,

comprising a transmission means (S) that converts digital data of a specific plurality of data channels (K_0-K_3) supplied to it at the input side into data units (HB0, HB1) such that each data unit (HB0) comprises an identical plurality of bits from each data channel (K_0-K_3), and serially transmits the individual data units (HB0, HB1) via a transmission medium (D) in the form of cells, whereby each cell is composed of a specific plurality of data units (HB0, HB1),

characterized in that each cell respectively comprises a specific, characteristic bit sequence;

in that a reception means (E) is provided that receives the serially transmitted data units (HB0, HB1) from the transmission means (S) and monitors them for the occurrence of the characteristic bit sequence, whereby the reception means (E), after detecting the characteristic bit sequence in the serially transmitted data units (HB0, HB1), determines the first data unit of the cell corresponding to the characteristic bit sequence and, beginning with this first data unit, successively divides the individual bits of each data unit (HB0, HB1) of the corresponding cell onto a plurality of parallel data channels (K_0-K_3) of the output side corresponding in number to the plurality of data channels (K_0-K_3) of the input side and outputs them in parallel.

15. ATM transmission system according to claim 14, characterized in that the transmission means (S) and the reception means (E) are fashioned such that the digital data of the parallel data channels (K_0-K_3) supplied to the transmission means (S) are transmitted from the transmission means (S) to the reception means (E) according to the method according to one of the claims 2-13 and are output at said reception means (E) via the parallel data channels (K_0-K_3) of the output side.

16. ATM transmission system according to claim 14 or 15, characterized in that the parallel data channels (K_0-K_3) supplied to the transmission means (S) and/or the parallel data channels (K_0-K_3) of the output side connected to the reception means (E) comprise a data transmission rate of approximately 830 Mbit/s; and in that the transmission means (S) optically transmits the individual data units (HB0, HB1) to the reception means (E) serially with a data rate of approximately 3.3 Gbit/s.